Session V

Integration of Assessment Results to EPA Goals

Session V Planning Topics

- How were results used to meet GPRA goals, set priorities, target specific regional ecosystems?
- How were results used to develop innovative avenues to meet program goals?
- How can we convince Programs to go beyond bean-counting and protect high-quality ecosystems?

Session V Goals

- Share ideas of success for Regional program applications
- Examine lessons learned from Regional experiences
- Relate ecosystem protection to GPRA goals

Ecological Risk Assessment

Anne Sergeant
U.S. Environmental Protection Agency
National Center for
Environmental Assessment

NCEA
National Center For Environmental Assessment

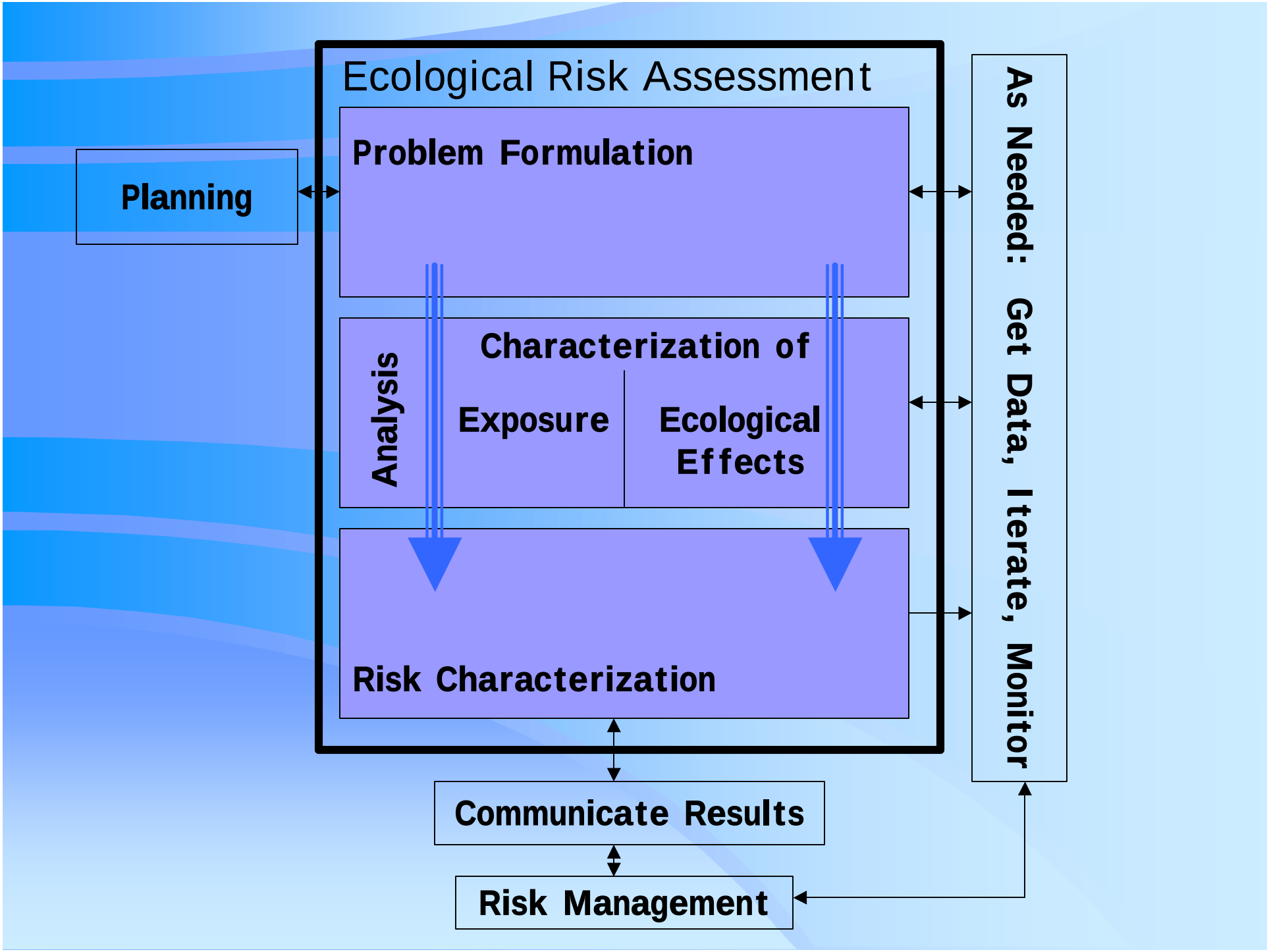
ORD
US EPA Office of Research and Development

Ecological Risk Assessment

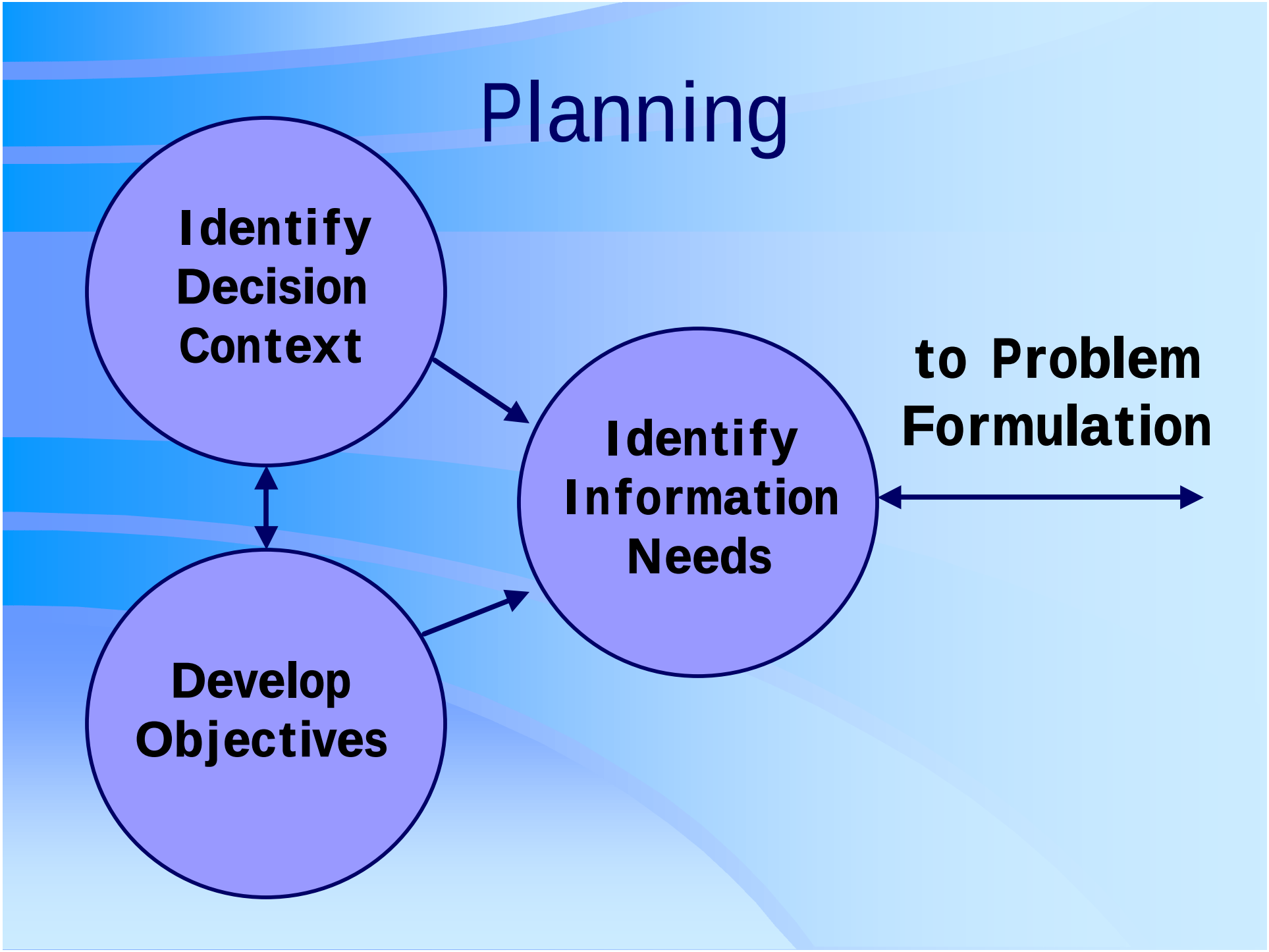
- A process that evaluates the likelihood that adverse ecological effects may occur as a result of exposure to a stressor.

Why We Do It

- Inform risk-management decisions
  - Describe risk:
    - Nature of effect
    - Magnitude of effect
    - Likelihood of effect


Ecological Risk Assessment
Planning
Problem Formulation
Analysis
Characterization of
Exposure
Ecological Effects
Risk Characterization
As Needed: Get Data, Iterate, Monitor
Communicate Results
Risk Management

Planning


Identify Decision Context
Develop Objectives
Identify Information Needs
to Problem Formulation

Identify Decision Context

- Players
- Decision
- Constraints
- Values

Develop Objectives

- Entity
- Attribute
- Desired state

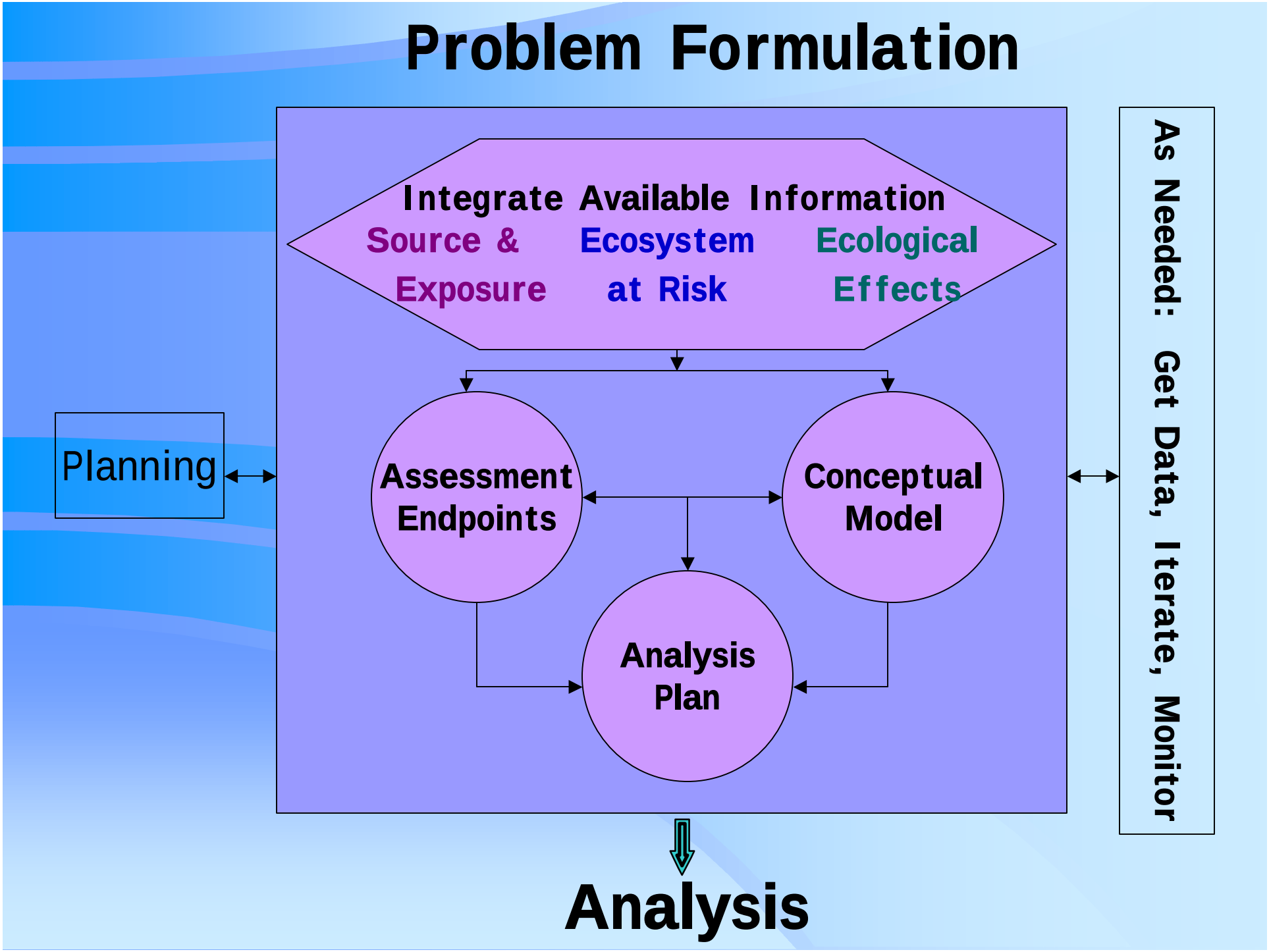
Example Objective

- Entity: scallop population in Waquoit Bay, MA
- Attribute: abundance
- Desired State: population that can support a fishery

Identify Information Needs

- Decisionmaker
- Interested parties
- Other analysts

Problem Formulation



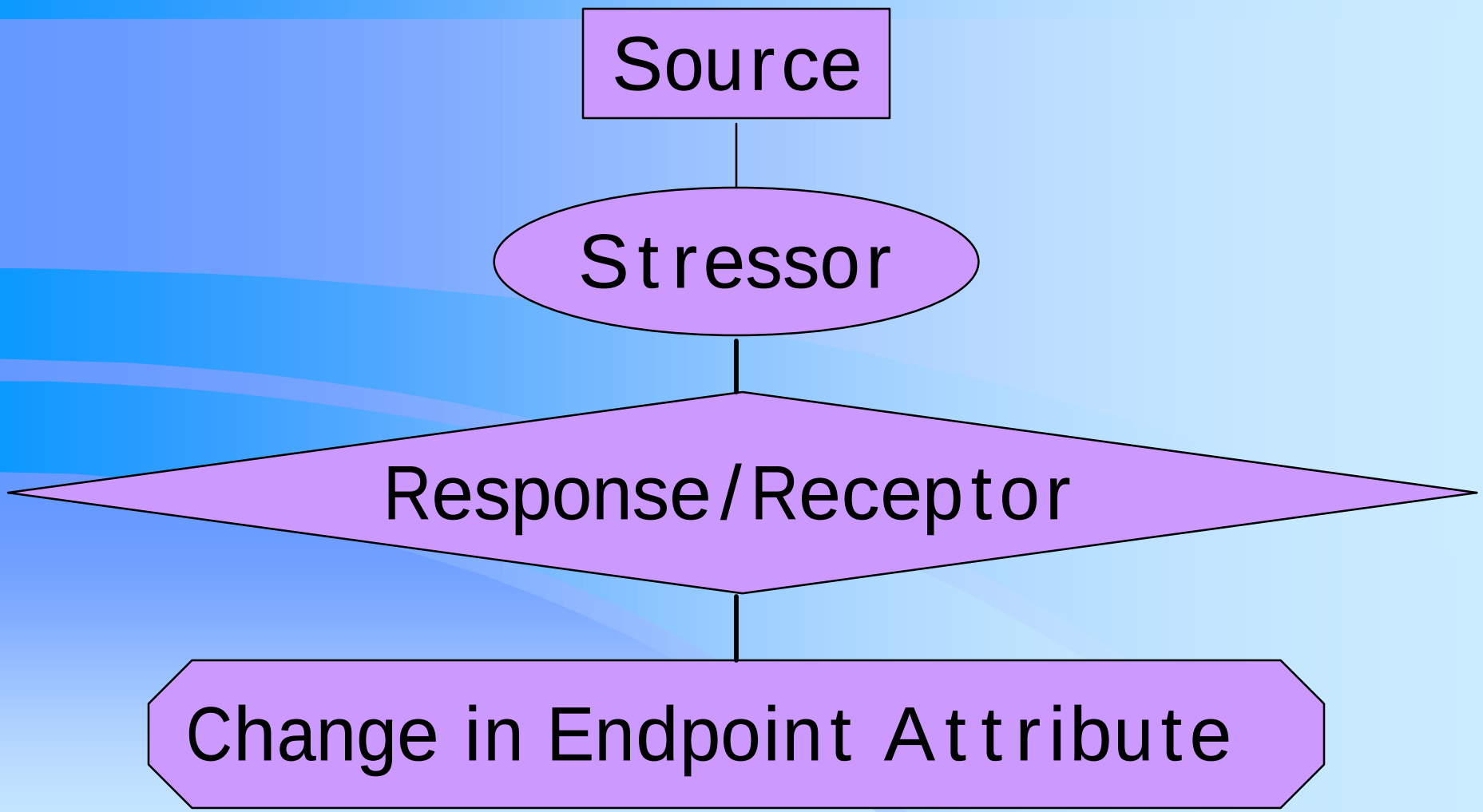
Assessment Endpoint

- Identifies
  - Entity
  - Attribute
  - Spatial and temporal extent

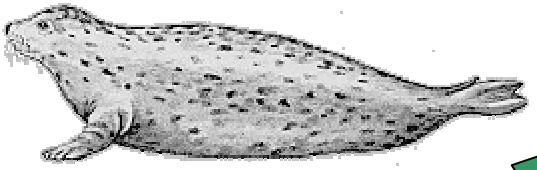
Assessment Endpoint

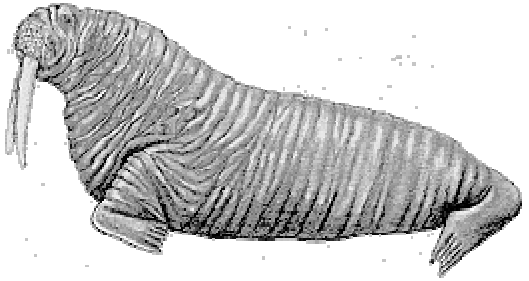
- Based on
  - Ecological relevance
  - Susceptibility to the stressor
  - Relevance to the management goal

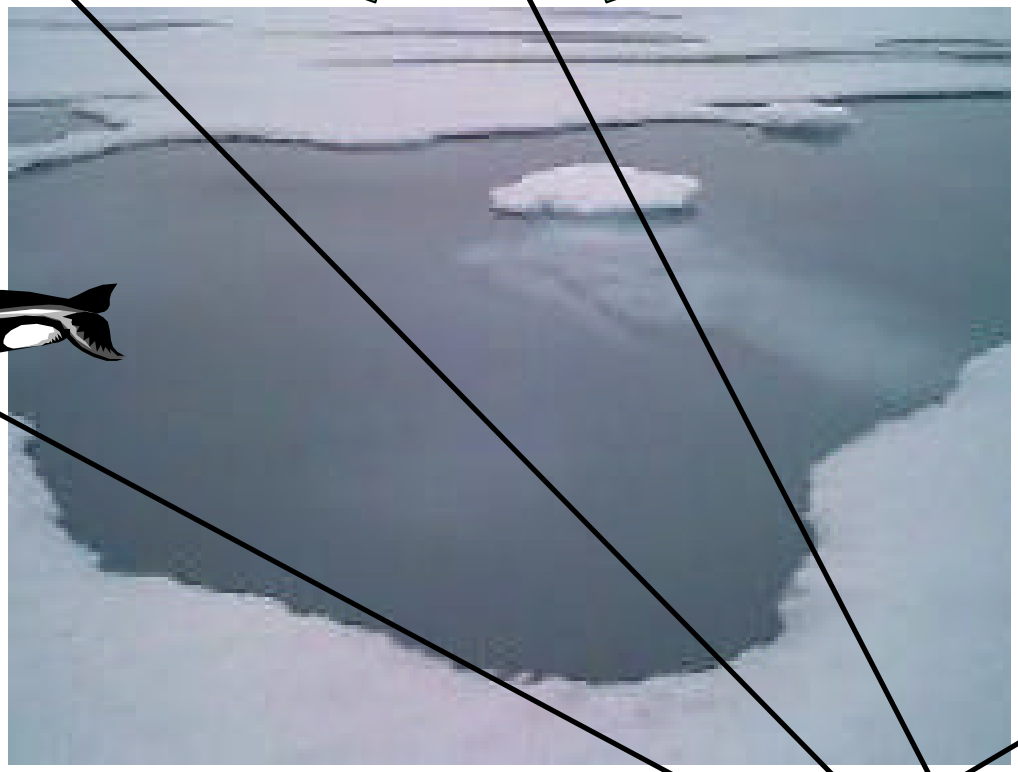
Conceptual Model

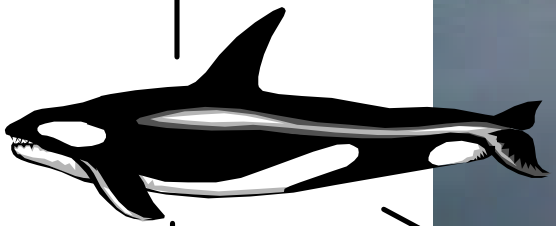


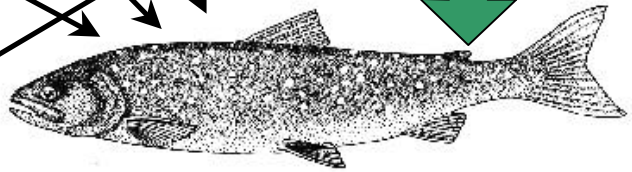
The Yupik People

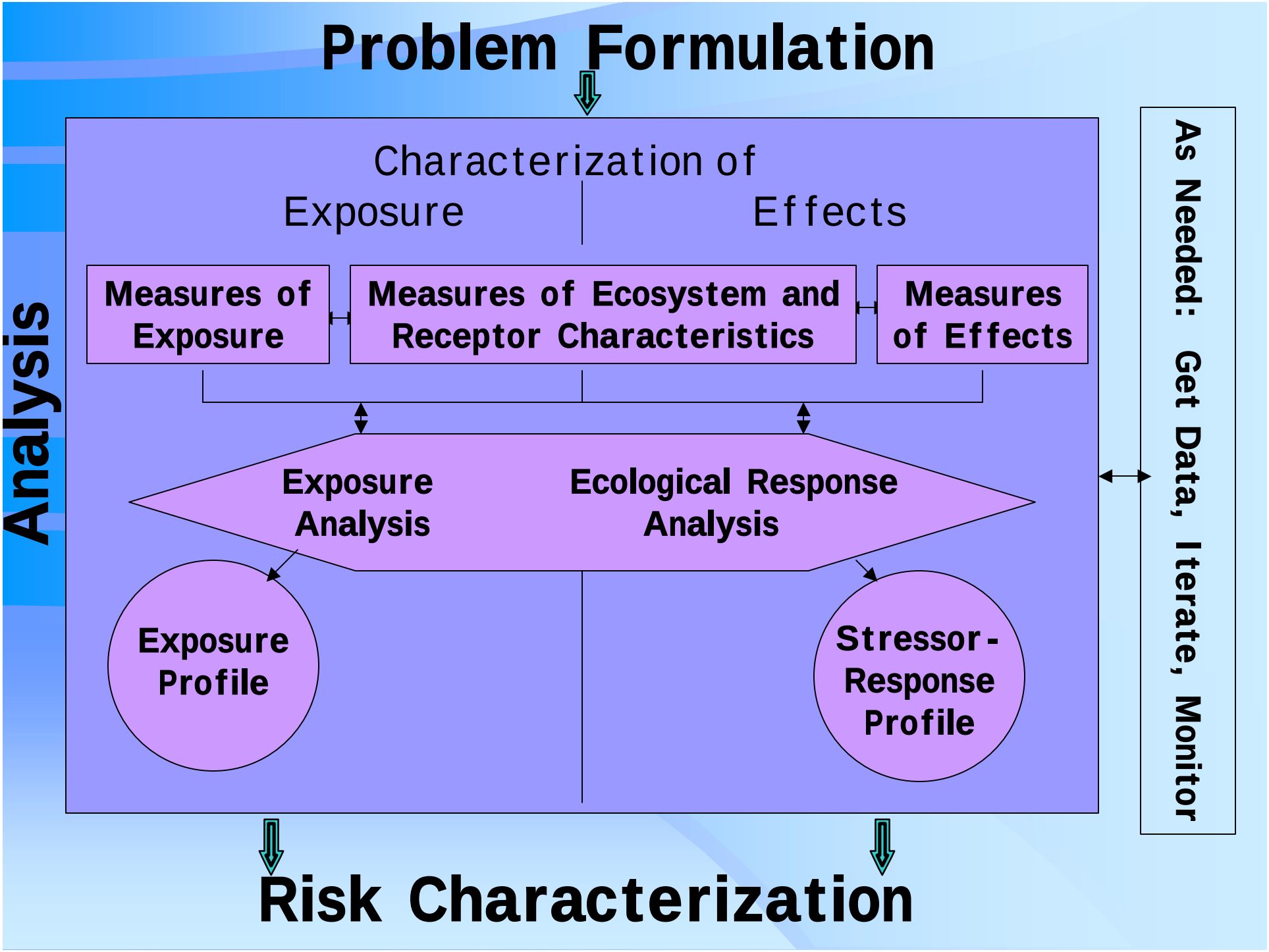






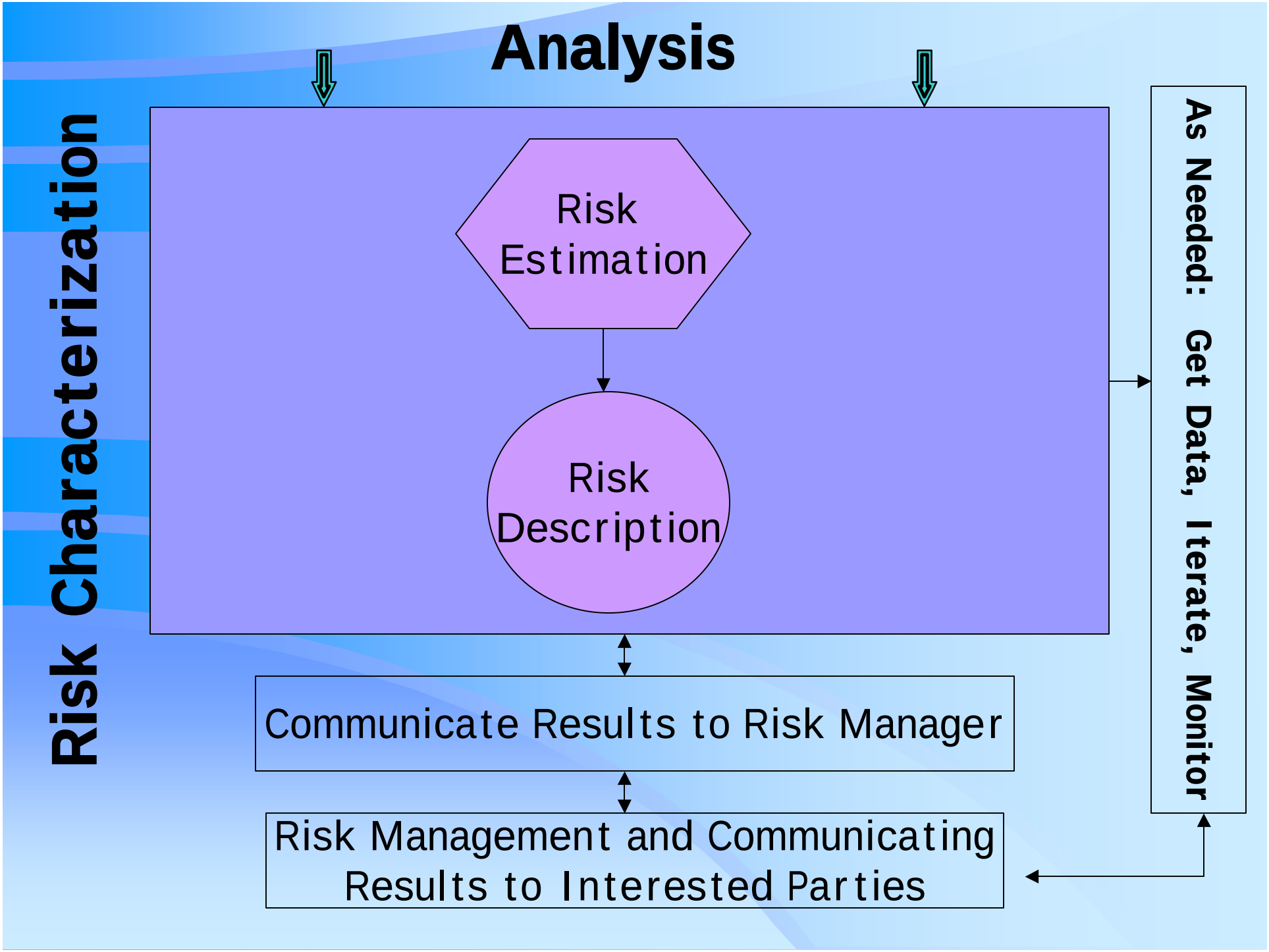





Problem Formulation
Analysis
Characterization of
Exposure
Effects
Measures of Exposure
Measures of Ecosystem and Receptor Characteristics
Measures of Effects
Exposure Analysis
Ecological Response Analysis
Exposure Profile
Stressor-Response Profile
As Needed: Get Data, Iterate, Monitor
Risk Characterization

Types of Measures

- Exposure
- Effects
- Ecosystem and Receptor Characteristics


Analysis
Risk Characterization
Risk Estimation
Risk Description
As Needed: Get Data, Iterate, Monitor
Communicate Results to Risk Manager
Risk Management and Communicating Results to Interested Parties